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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09 627,979	07/28/2000	Randy H. Y. Lo	UPA-00156	3057

7590 05/23/2002

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EXAMINER

NGUYEN, DILINH P

ART UNIT	PAPER NUMBER
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2814

DATE MAILED: 05/23/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/627,979

Applicant(s)

LO ET AL

Examiner

DiLinh Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 06 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 41-57 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 41-57 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 41-45, 47-54 and 56-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Venkateshwaran et al. (U.S. Pat. 6339254) in view of Akram et al. (U.S. Pat. 5994166).

Venkateshwaran et al. disclose a semiconductor device (fig. 2) comprising:

a substrate 211;

at least two chips packages 201, each of the chip packages being a packaged chip module;

a plurality of electrical connect points 202 –203 electrically connecting the chip packages with the substrate;

a plurality of electrical connect pins 230; and

a package material enclosing the connect points and the chip package.

Venkateshwaran et al. disclose the claimed invention except for not specifically point out that the package material enclosing the substrate.

Akram et al. disclose a semiconductor device (cover fig.) comprising:

a package material 172 (column 6, line 26) enclosing a substrate 140 (column 6, line 61), a connect points and a chip packages to achieve densely packaged

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semiconductor device (abstract). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Venkateshwaran et al to achieve densely packaged semiconductor device, as shown by Akram et al.

- Regarding claims 42 and 51, Venkateshwaran et al. disclose the claimed invention and also the chip package is a chip-scale package (column 5, lines 48-50).
- Regarding claims 43 and 52, Venkateshwaran et al. disclose at least one of the chip packages is a wire bonding 203 package.
- Regarding claims 44 and 53, Venkateshwaran et al. disclose at least one of the chip packages is a flip chip bonding package.
- Regarding claims 45 and 54, it would have been obvious to one having ordinary skill in the art to form one of the chip packages is a central pad bonding package.
- Regarding claims 47 and 56, Venkateshwaran et al. disclose the plurality of electrical connect pins are solder balls.
- Regarding claims 48 and 57, Venkateshwaran et al. disclose the plurality of electrical points are solder balls 202.
- Regarding claims 49-50, Venkateshwaran et al. disclose the chip 201 is bonded to the substrate by wire bonding or flip chip bonding, and it would have been obvious that the chip of Venkateshwaran et al. is a bare chip.

3. Claims 46 and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Venkateshwaran et al. (U.S. Pat. 6339254) in view of Akram et al. (U.S. Pat. 5994166) and further in view of Chiang et al. (U.S. Pat. 6307256).

Venkateshwaran et al. and Akram et al. disclose the claimed invention except for not specifically point out that the chip packages pass burn-in test and function test. Chiang et al. disclose a semiconductor package comprising: a chip passes burn in test and function test (column 5, lines 64-67) to ensure the maximum yield on the wafer. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Venkateshwaran et al. and Akram et al. to ensure the maximum yield on the wafer, as shown by Chiang et al.

Response to Arguments

Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection. See the rejection above.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DiLinh Nguyen whose telephone number is (703) 305-6983. The examiner can normally be reached on 8:00AM - 6:00PM (M-F).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, OLIK CHAUDHURI can be reached on (703) 308-2794. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

DLN
May 17, 2002


Douglas Wille
Patent Examiner